INCH-POUND

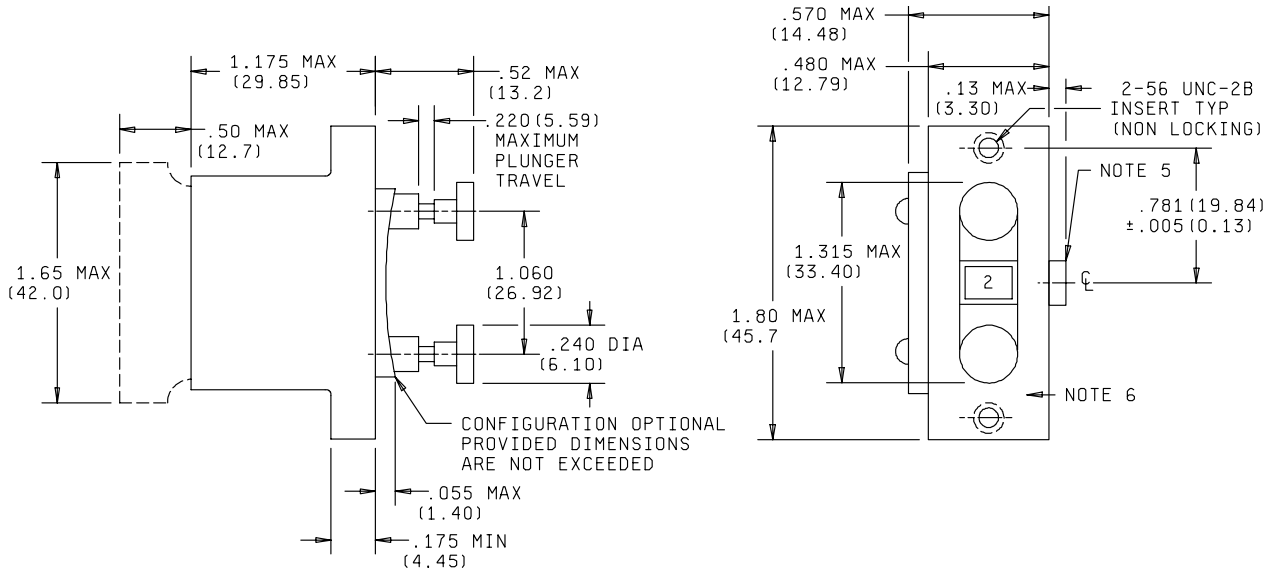
MIL-PRF-22710/30A
w/ Amendment 1
19 December 2003
SUPERSEDING
MIL-PRF-22710/30A
20 April 2001

PERFORMANCE SPECIFICATION SHEET

SWITCHES, ROTARY (PRINTED CIRCUIT), PUSHBUTTON BIDIRECTIONAL, SEALED, HIGH SHOCK, RFI SHIELDED, ILLUMINATED OR NONILLUMINATED), LOW LEVEL, STYLE SRPC30

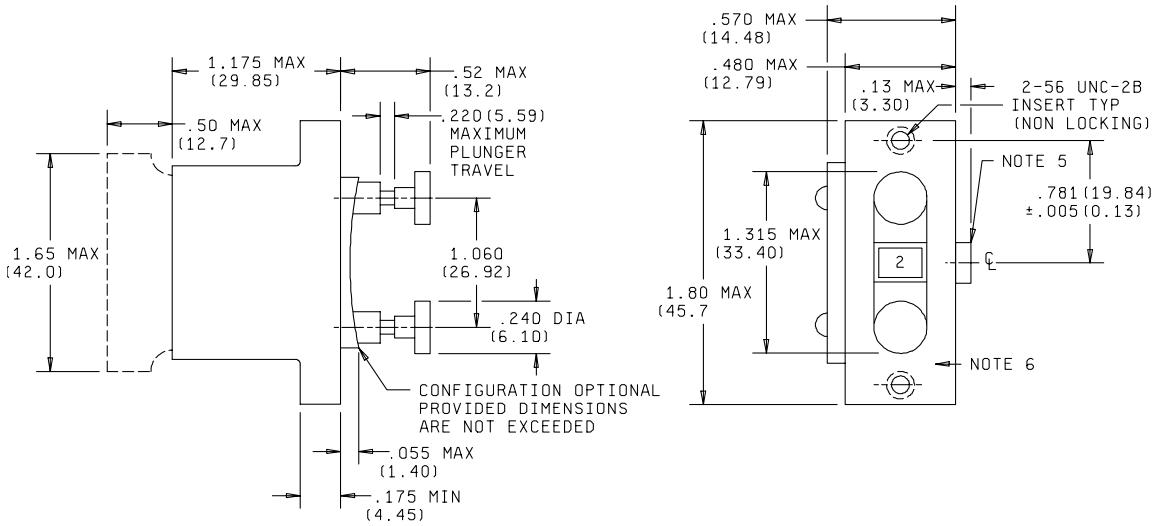
This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and the issue of MIL-PRF-22710 listed in that issue of the Department of Defense Index of Specifications and Standards (DODISS) specified in the solicitation.



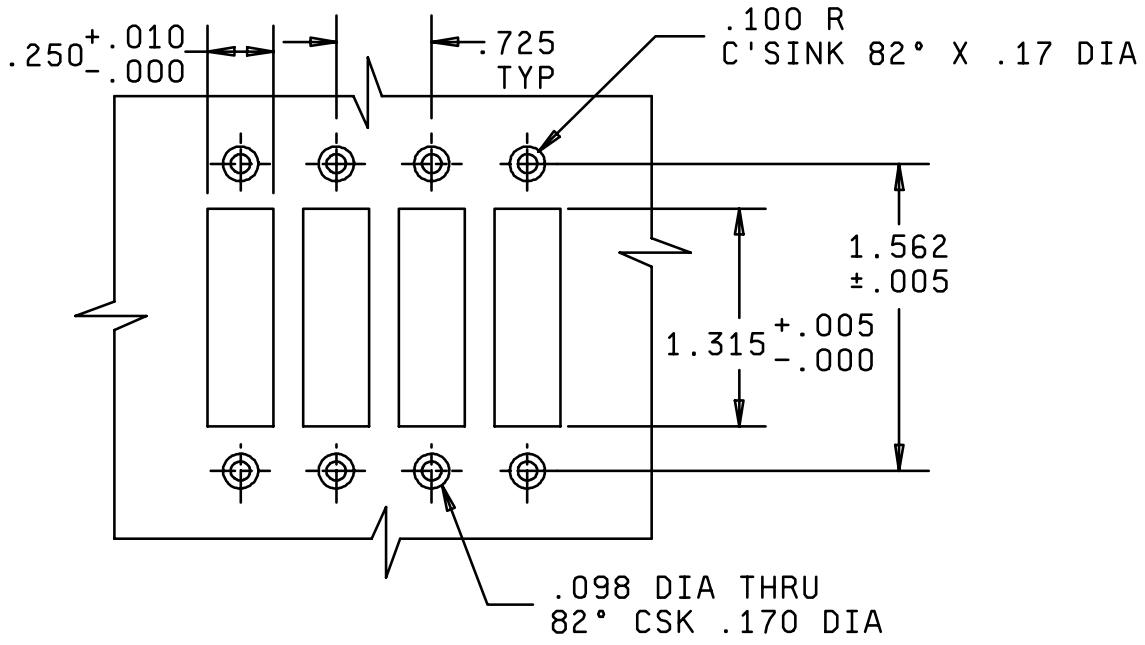
NOTES
1. Dimensions are in inches. Metric equivalents are for general information only and are based upon 1.00 inch = 25.4 mm.
2. Unless otherwise specified, tolerances are ± .03 (.8 mm) for two place decimals and ±.010 (.25 mm) for three place decimals.
3. Lamps installed here, where illumination is specified.
4. This mounting surface, has optional conductive coating to provide RFI shielding, when required.
5. Depressing top button increases readout digit. Depressing lower button decreases readout digit.

FIGURE 1. Flush lens style.



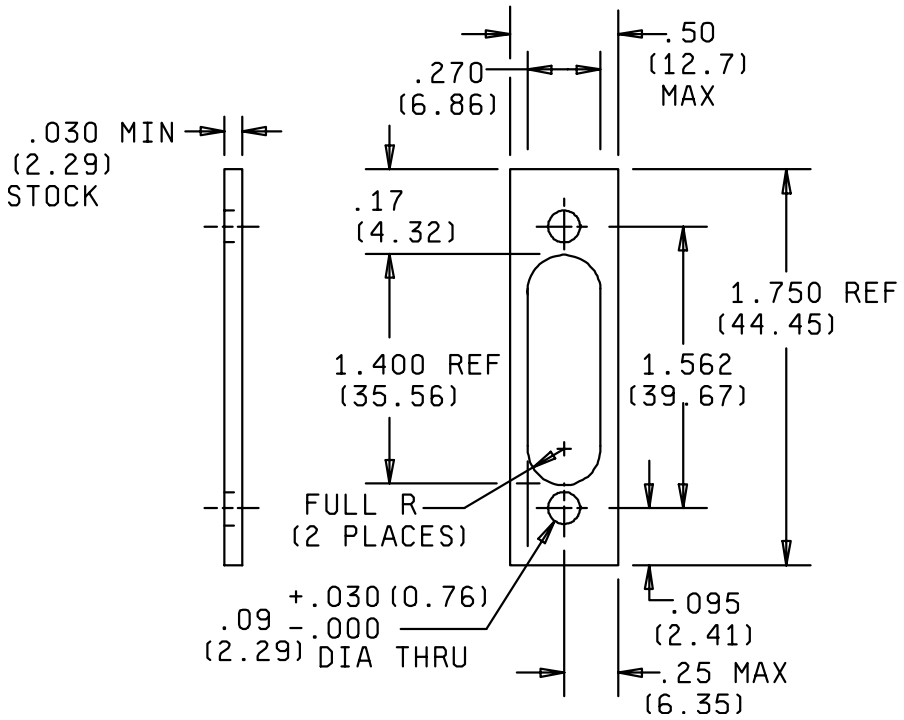
NOTES
1. Dimensions are in inches. Metric equivalents are for general information only and are based upon 1.00 inch = 25.4 mm.
2. Unless otherwise specified, tolerances are ± .03 (.8 mm) for two place decimals and ±.010 (.25 mm) for three place decimals.
3. Lamps installed here, where illumination is specified.
4. This mounting surface, has optional conductive coating to provide RFI shielding, when required.
5. Depressing top button increases readout digit. Depressing lower button decreases readout digit.

FIGURE 2. Extended lens style.



NOTES
1. Dimensions are in inches. Metric equivalents are for general information only and are based upon 1.00 inch = 25.4 mm.
2. Unless otherwise specified, tolerances are ± .03 (.8 mm) for two place decimals and ±.010 (.25 mm) for three place decimals.
3. Panel cutout is applicable to both flush lens and extended lens styles.

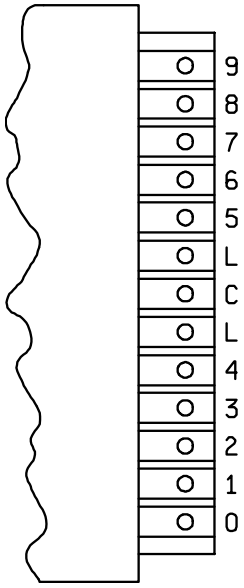
FIGURE 1. Recommended panel cutout.



h

NOTES
1. Dimensions are in inches. Metric equivalents are for general information only and are based upon 1.00 inch = 25.4 mm.
2. Unless otherwise specified, tolerances are ± .03 (.8 mm) for two place decimals and ±.010 (.25 mm) for three place decimals.

FIGURE 1. Panel seal gasket.



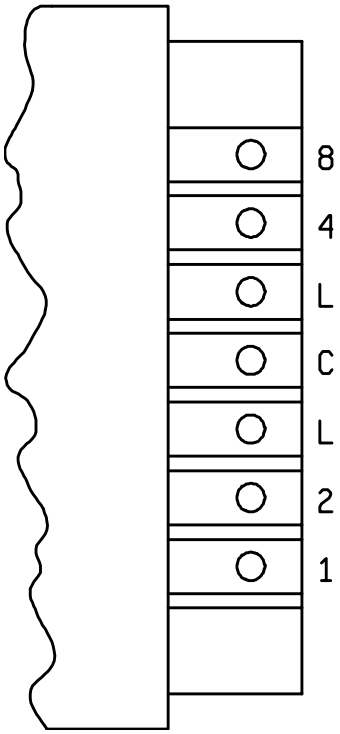
.032 (.81) minimum Thk PCB;
.038 (.97) minimum dia. solder hole connections

Module A

Truth Table I
Circuit configuration 1
36° Indexing

Dial Reads	Common C Conn to:
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

FIGURE 1. Terminal design and circuit configuration.



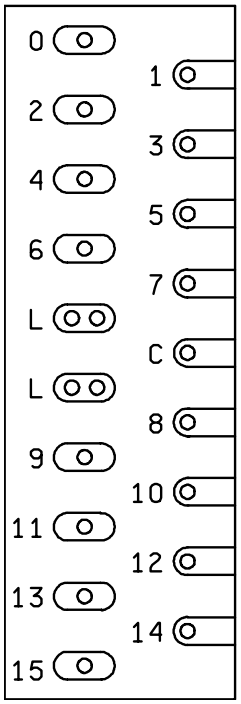
.032 (.81) minimum Thk PCB;
.064 (1.63) minimum dia. solder hole connections

Module B

Truth table 2
Circuit Configuration 2
36° Indexing

Dial Reads	Common C Conn to:			
	1	2	4	8
0				
1	•			
2		•		
3	•	•		
4			•	
5	•		•	
6		•	•	
7	•	•	•	
8				•
9	•			•

FIGURE 1. Terminal design and circuit configuration - Continued.



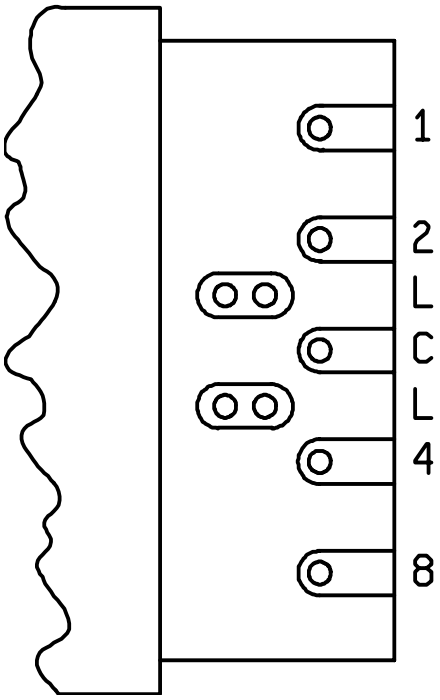
Truth Table 3
Circuit configuration 3
22.5° Indexing

Dial Reads	Common C Conn to:
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15

.032 (.81) minimum Thk PCB;
.038 (.97) minimum dia. solder hole connections

Module C

FIGURE 1. Terminal design and circuit configuration - Continued.



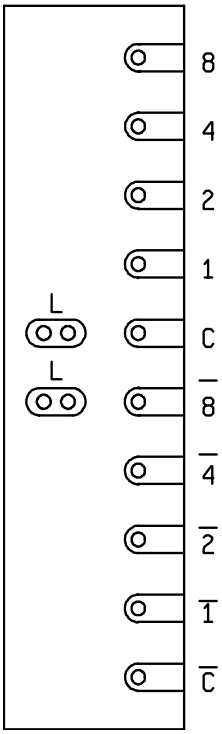
Truth Table 4
Circuit configuration
22.5° Indexing

Dial Reads	Common C Conn to:			
	1	2	4	8
0				
1	•			
2		•		
3	•	•		
4			•	
5	•		•	
6		•	•	
7	•	•	•	
8				•
9	•			•
10		•		•
11	•	•		•
12			•	•
13	•		•	•
14		•	•	•
15	•	•	•	•

.032 (.81) minimum Thk PCB;
.038 (.97) minimum dia. solder hole connections

Module D

FIGURE 1. Terminal design and circuit configuration - Continued.



Truth table 5
Circuit configuration 5
22.5° Indexing

Dial Reads	Common C Conn to:				Common $\overline{C}$ Conn to:			
	1	2	4	8	$\overline{1}$	$\overline{2}$	$\overline{4}$	$\overline{8}$
0					•	•	•	•
1	•					•	•	•
2		•			•		•	•
3	•	•					•	•
4			•		•	•		•
5	•		•			•		•
6		•	•		•			•
7	•	•	•					•
8				•	•	•	•	
9	•			•		•	•	
10		•		•	•		•	
11	•	•		•			•	
12			•	•	•	•		
13	•		•	•		•		
14		•	•	•	•			
15	•	•	•	•				

.032 (.81) minimum Thk PCB;
.038 (.97) minimum dia. solder hole connections

Module E

NOTES
1. Dimensions are in inches. Metric equivalents are given for information only and are based on 1 inch = 25.4 mm.

FIGURE 1. Terminal design and circuit configuration - Continued.

REQUIREMENTS:

Dimensions and configuration: See figures 1, 2 and 5.

Construction: D.

Indexing: 22.5° or 36°.

Temperature-life characteristic: D, test loads as shown in table I (For illuminated switches, maximum temperature is 85° C).

TABLE I. Electrical test load.

Test of condition	Resistive	
At atmospheric pressure	0.125 A	28 V dc and 115 ac
At reduced barometric pressure	0.125 A	28 V dc and 115 ac
Life (low level)	10 mA	30 mV

Vibration grade: 3 (15g, 10 - 2,000 Hz).

Shock types: M (100 g's) and H (high-impact). Methods I and II are applicable.

Altitude rating: C (70,000 feet).

Terminal design: See applicable detail on figure 5 and table III.

Contact resistance:
Initial: 100 milliohms, maximum.
Following life (rotational) and moisture resistance -: 60 milliohms, maximum above initial value.

Operating force (push force required to index from any detent position to the next):
20 ounces minimum
40 ounces maximum

Seal: Method II.

Dielectric withstanding voltage:
At atmospheric pressure: 750 volts, rms for one minute.
At reduced barometric pressure: 250 volts rms.

Sand and dust: Applicable.

Explosion: Applicable

Life (rotational): MIL-STD-202, method 206, test condition G.

Contact rating: .125 ampere at 28 volts (ac peak to peak, or dc) resistive.

Moisture resistance: Method II.

Luminance: Illuminated switches areas shown in table II. Lamps are supplied with the switches.

Marking: Terminals shall be marked as shown in figure 5.

TABLE II. Photometric brightness.

Lamp	Switch Filter Lens	Brightness	Rating	
			Volts	Ampere
MS90542-6833	Clear	2.0 ± 1.0 foot-lamberts	5	0.115
MS90542-6833	Red	1.0 ± 0.5 foot-lamberts	5	0.115

RFI shielded: When specified, see table III.

Life, low-level switching: Applicable.

Qualification: Qualification of the RFI shielded version of a particular switch type shall qualify the non-RFI shielded unit.

Part number: M22710/30- X X X

Style and RFI option:
(see table III)
Truth tables 1 thru 5:
(see figure 5)
Luminance option:
(see table IV)

TABLE III. Style and RFI option.

Code	Style	RFI shielded
A	Flush lens	No
B	"	Yes
C	Extended lens	No
D	"	Yes

Table IV. Luminance option.

Code	Illumination	Marking	Background
A	None	White opaque	Black opaque
B	Clear	White translucent	"
C	Red	"	"
D	None	Black opaque	White opaque
E	Clear	"	White translucent
F	Red	"	"

Reference documents:
MIL-PRF-22710
MIL-STD-202

Amendment Notations. The margins of this specification are marked with vertical lines to indicate where modifications from this amendment were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations.

Custodians:
Army - CR
Navy- EC
Air Force - 11
DLA - CC

Preparing Activity:
DLA - CC

(Project 5930-1789)

Review activities:
Army - AR, CR4, SM
Navy - AS, MC
Air Force – 99

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at www.dodssp.daps.mil/.